Egger, J.M. 2015. Range extension and first record of *Castilleja chambersii* (Orobanchaceae) for the state of Washington. Phytoneuron 2015-64: 1–6. Published 23 November 2015. ISSN 2153 733X

RANGE EXTENSION AND FIRST RECORD OF *CASTILLEJA CHAMBERSII* (OROBANCHACEAE) FOR THE STATE OF WASHINGTON

J. MARK EGGER
Herbarium, Burke Museum of Natural History and Culture
University of Washington
Seattle, Washington 98195-5325
m.egger@comcast.net

ABSTRACT

A recent collection of *Castilleja chambersii* J.M. Egger & Meinke from Pacific Co., Washington, is documented and illustrated. This collection represents both a northward range extension and a first occurrence for this species in the state of Washington.

In the early 1970's, noted Oregon botanist Kenton L. Chambers explored extensively in the Coast Range of Clatsop Co., Oregon, with an emphasis on the several volcanic peaks representing the highest elevations in this older range (Chambers 1973, 1974). During these studies, Chambers noted the presence of an undescribed *Castilleja* species on exposed basalt rocks near the summits of two of the peaks, Onion Peak and Sugarloaf Mountain. The identity of these plants remained largely unexplored until the late 1990's, when Robert J. Meinke and I independently began to study Chamber's specimens and located a third population near the summit of Angora Peak, a basaltic summit ca. 4.0 km south of Onion Peak. Subsequently, we formally described *Castilleja chambersii* J.M. Egger & Meinke, based on a collection from Angora Peak (Egger & Meinke 1999).

In more recent years, several local botanists in Clatsop County, including Michael Patterson and Kathleen Sayce, spent considerable time looking for additional populations of *Castilleja chambersii*, as have employees of several agencies, timberland companies, conservation groups, and amateur botanists. Patterson, in particular, has contributed to a better understanding of the geographical extent and the population numbers on Onion and Angora Peaks and Sugarloaf Mountain. I've also returned to Clatsop County on several occasions to observe the known populations and to attempt to locate and verify some of the 10 additional populations of *C. chambersii* reported by Buechling and Tobalske (2011). However, Patterson, Sayce, and I have been unable to verify any additional populations in Clatsop County or in adjacent Tillamook Co., Oregon. All sites searched based on the Buechling and Tobalske study have contained only the widespread and somewhat similar species, *C. hispida* Benth., and all sites are at lower elevations than those on the three peaks known to host *C. chambersii*. Moreover, Buechling (pers. comm. 2011) confirmed to me that no voucher specimens, photographs, or GPS readings were collected for their study, and they had not consistently attempted to distinguish *C. hispida* from *C. chambersii* in their field identifications. It now appears likely that the Oregon distribution of *C. chambersii* is limited to the three peaks vouchered thus far. Our research has also determined that the largest populations of *C. chambersii* are found scattered over several sites on the upper portions of Onion Peak, while the populations on Angora Peak and Sugarloaf Mountain are considerably smaller and more restricted, especially on Sugarloaf, where only a single site with a small number of plants has been located.

However, in June 2015, Weyerhaeuser Company forester Kristi Tausch located and photographed live, vigorous specimens of *Castilleja chambersii* in a still-moist basalt seep on company lands on a relatively high elevation ridge in the Coast Range of the state of Washington (Fig. 1). These photos were eventually forwarded to me, and in early July 2015, I accompanied Tausch, Patterson,

Sayce, Laura Six, a Weyerhauser plant ecologist, and Nancy Peckman on a visit to two of the sub-populations located by Tausch, from which I collected the following voucher.

Washington. Pacific Co.: Coast Range, eastern Willapa Hills, upper W slope of unnamed ridge system above the headwaters of the Little East Fork of the Naselle River to the NW and of the West Fork of the Gray's River to the SE, T11N, R7E, Sect. 5, NE1/4, crevices and ledges in a seasonally seeping, basaltic rock face, 702 m, 7 Jul 2015, *Egger 1544* (WTU). The plant and associated collection obtained are shown in Figs. 2-4.

This collection is the first vouchered occurrence of *Castilleja chambersii* in the state of Washington and extends its known range to the north-northeast by about 70 km. Thus far, *C. chambersii* is known in Washington from five small sub-populations, all within a kilometer of each other along the same ridge system and at elevations ranging from about 610-715 m. This is very similar to its elevational range in Oregon, 632-950 m. In both states the vast majority of the plants occur between 680-900 m elevation. The Pacific County populations occur further from the coast, about 21 km from Gray's Bay near the mouth of the Columbia River and 27 km from the outer coastline, while the populations in Oregon range in distance from the coast between 3.9 km on Angora Peak and 8.7 km on Sugarloaf Mountain. The habitat of *C. chambersii* populations in Washington is closely similar to the Oregon populations, with most plants in both areas found in and around seeps with a basalt substrate in thin turf or in rocky crevices or benches of similar slope and aspect. One small sub-population was found on a relatively flat, gravelly ridge top at a seemingly more xeric site, but this is very atypical for this species. The formations on which the Oregon plants occur are Miocene flood basalts, while those of the Willapa Hills in Washington are uplifted Eocene seafloor basalts about twice the age of the former (Sayce 2010 and pers. comm. 2015). Apparently suitable habitat for *C. chambersii* appears to be relatively extensive in this part of Pacific County, and further fieldwork on seeping, rocky slopes in the correct elevational range may well uncover additional populations.

ACKNOWLEDGEMENTS

I thank Maria Yousoufian (WTU) for imaging the herbarium specimen. My deep gratitude is also extended to Laura Six for arranging our visit onto Weyerhaeuser timberland and especially to Kristi Tausch for helping us relocate some of the plants she originally discovered in the field. Mike Patterson and Douglas Ray provided invaluable assistance in my study of *Castilleja chambersii* in Oregon. I also thank Kathleen Sayce for very useful comments on an earlier draft. [Corrections to the figure captions were made 2 Dec 2015.]

LITERATURE CITED

Buechling, A. and C. Tobalske. 2011. Predictive habitat modeling of rare plant species in Pacific Northwest forests. West. J. Applied Forestry 26: 71–81.

Chambers, K.L. 1973. Floristic relationships of Onion Peak with Saddle Mountain, Clatsop Co., Oregon. Madroño 22: 105–114.

Chambers, K.L. 1974. Notes on the Flora of Clatsop Co., Oregon. Madroño 22: 278–279.

Egger, J.M. and R.J. Meinke. 1999. *Castilleja chambersii* (Scrophulariaceae), a new rare species from the northern Coast Range of Oregon. Brittonia 51: 445–451.

Sayce, K. 2010. Botanizing in the Swala-lahos Floristic Area. Kalmiopsis 17: 17–28.

Fig. 1. *Castilleja chambersii*, Coast Range, Pacific Co., Washington, 16 Jun 2015. Plants in typical condition, with seeping moisture still present on this date. Also note the secondary lobes on many of the primary bract lobes, an important character for this species. Photo by Kristi Tausch.

Fig. 2. *Castilleja chambersii* (*Egger1544*, WTU) Coast Range, Pacific Co., Washington, 7 Jul 2015. Plants with many aborted flowers due to severe drought of early summer 2015. Photo by Mark Egger.

HERBARIUM OF
404452
UNIVERSITY OF WASHINGTON
Castilleja chambersii J.M. Egger & Meinke
var. ssp.
Family Orobanchaceae 7 Jul 2015
Location Coast Range, near summit of ridge system above headwaters of Little East Fork of the Naselle River.
Jurisdiction Weyerhäuser Corporation County Pacific
State WA Country Elevation ca. 2300 ft.
Habitat Crevices and ledges in igneous rock face in seepy area.
Color mostly red to reddish-orange bracts, some faded to dull purplish or pale white.
Notes Plants affected by severe drought conditions, with many inflorescences remaining seedless. Uncommon and scattered.
Mark Egger 1544 Distribution WTU Photo? yes

Fig. 3. *Castilleja chambersii* (*Egger1544*, WTU), Coast Range, Pacific Co., Washington, 7 Jul 2015. First collection for this species from the state of Washington.

Fig. 4. *Castilleja chambersii* (*Egger1544,* WTU), Coast Range, Pacific Co., Washington, 7 Jul 2015. Cropped specimens.